SECTION 6.0

Natural Gas Supply

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6.1 Introduction

This section discusses the natural gas supply for the San Francisco Electric Reliability Project (SFERP). Subsection 6.2 describes the proposed natural gas supply pipeline. The gas supply pipeline construction methods and metering station are described in Subsection 6.3. Pipeline operations are described in Subsection 6.4. Natural gas will be obtained from the Pacific Gas & Electric Company's (PG&E's) transmission pipeline located west of the project site at the intersection of 25th Street and Illinois Street (see Appendix 6). A new 12-inch-diameter pipeline will be constructed from the PG&E tap point on line 101 to the SFERP site. A meter station will be installed at the SFERP site.

6.2 Proposed Route

The proposed pipeline is approximately 900 feet long. The pipeline would run north from the SFERP metering station (located on the western side of the project site, adjacent to the San Francisco Municipal Railway (MUNI) Metro East site (see Figure 6-1 at the end of this section) to 25th Street. From there the pipeline will proceed 800 feet west to tie into the existing 24-inch PG&E gas pipeline in Illinois Street.

The specific location of the pipeline will be determined during detail design based upon the avoidance of existing pipelines and other buried utilities.

Construction primarily will be open trench with a construction corridor of approximately 50 feet. The construction corridor will be located in Illinois and 25th Streets, and on City of San Francisco- (City) owned property.

No other alternative routes were evaluated because of the proximity of the PG&E 24-inch gas pipeline to the SFERP site.

6.3 Construction Practices

6.3.1 Gas Pipeline

The natural gas pipeline will be constructed with a minimum of one crew working continuously along the route, with construction of the entire pipeline requiring a peak workforce of approximately 8 workers. Most major pieces of construction equipment will remain along the route during construction. As for the main site construction, the Port-controlled Western Pacific land to the east of the project site will serve as the location for storing pipe and other pipeline construction materials as well as construction parking. Pipeline construction will take approximately 1.5 months and is expected to begin toward the middle of 2006 following the start of project construction.

The pipeline will be constructed of alloyed carbon steel in accordance with the American Petroleum Institute (API) specification for gas pipeline. The pipe will have factory-applied corrosion-protection coating. Joints will be welded, inspected using x-ray, and wrapped with a corrosion-protection coating.

The construction of the natural gas pipeline will consist of the following:

1. **Trenching width** depends on the type of soils encountered and requirements of the governing agencies. The optimal trench will be approximately 18 inches wide and 48 inches deep. If loose soil is encountered, a trench up to 8 feet wide at the top and 2 feet wide at the bottom may be required. The pipeline will be buried to provide a minimum cover of 36 inches. The excavated soil will be piled on one side of the trench and used for backfilling after the pipe is installed. The pipeline will be installed through trenching at all locations except where boring or directional drilling is required to pass beneath other buried utilities.

2. **Stringing** consists of trucking lengths of pipe to the right-of-way (ROW) and laying them on wooden skids beside the open trench.

3. **Installation** consists of bending, welding, and coating the weld-joint areas of the pipe after it has been strung, padding the ditch with sand or fine spoil, and lowering the pipe string into the trench. Bends will be made using a cold bending machine or shop-fabricated as required for various changes in bearing and elevation. Welding will meet the applicable API standards and will be performed by qualified welders. Welds will be inspected in accordance with API Standard 1104. Welds will undergo 100 percent radiographical inspection by an independent, qualified radiography contractor. All coating will be checked for holidays (i.e., defects) and will be repaired before lowering the pipe into the trench.

4. **Backfilling** consists of returning spoil back into the trench around and on top of the pipe, ensuring that the surface is returned to its original grade or level. The backfill will be compacted to protect the stability of the pipe and to minimize subsequent subsidence.

5. **Plating** consists of covering any open trench in areas of foot or vehicle traffic at the end of a workday. Plywood plates will be used in areas of foot traffic and steel plates will be used in areas of vehicle traffic to ensure public safety. Plates will be removed at the start of each workday. Efforts will be made to minimize the length of open trench along the route.

6. **Hydrostatic testing** consists of filling the pipeline with potable water, venting all air, increasing the pressure to the specified code requirements, and holding the pressure for a period of time. After hydrostatic testing, the test water will be analyzed for pH and total dissolved solids (TDS) and discharged to the City's combined sewer system, unless the analysis shows that the water's pH and/or TDS exceeds the City's discharge criteria. In this case the water would be trucked to an appropriate treatment or disposal facility. The construction contractor will obtain all necessary approvals for test water use and discharge.

7. **Cleanup** consists of restoring the surface of the roadway or ROW by removing any construction debris, grading to the original grade and contour, and revegetating or repairing where required.
8. **Commissioning** consists of cleaning and drying the inside of the pipeline, purging air from the pipeline, and filling the pipeline with natural gas.
9. **Safety** consists of using PG&E's standard safety plan for the project. This plan addresses specific safety issues, traffic control, and working along City streets and other areas, as required by permits.

6.3.2 Metering Station

A gas-metering station will be required at the SFERP site to measure and record gas volumes. In addition, facilities will be installed to regulate the gas pressure and to remove any liquids or solid particles. The metering station will require an area of approximately 25 feet by 70 feet on the SFERP site.

Construction activities related to the metering station will include grading a pad and installing above- and belowground gas piping, metering equipment, gas conditioning, pressure regulation, and possibly pigging facilities. A distribution power line will also be installed to provide power for metering station operation lighting, communication equipment, and perimeter chain-link fencing for security.

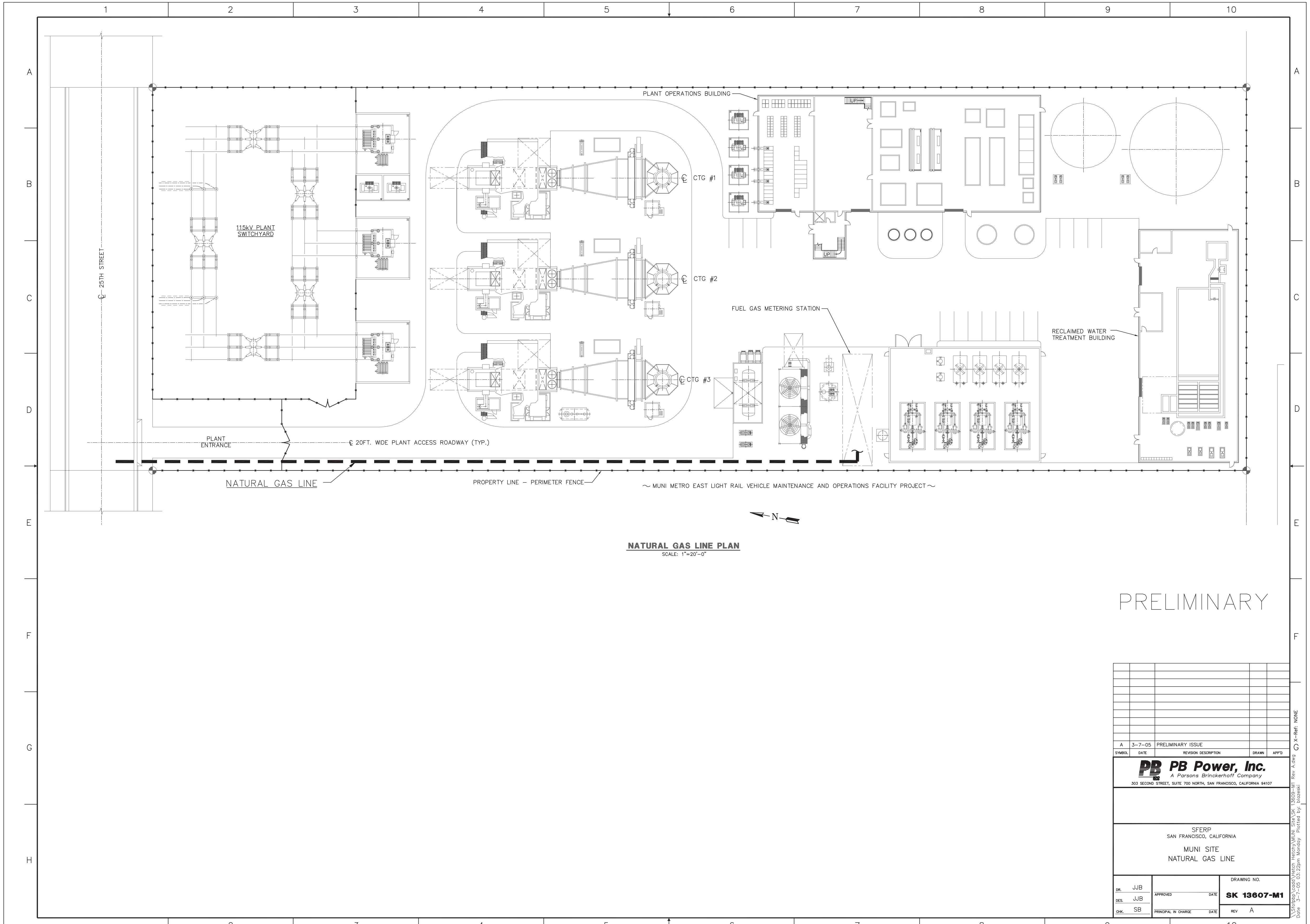
6.4 Pipeline Operations

The proposed natural gas supply pipeline will be designed, constructed, and operated in accordance with 49 CFR 192 and CPUC General Order No. 112. Specifically, the pipeline will be designed in accordance with the standards required for gas pipelines in populated areas. It will be installed with a minimum of 36 inches of cover as required by the Code of Federal Regulations.

PG&E's standard operations and maintenance plan will be in place, addressing both normal procedures and conditions and any upset or abnormal conditions that could occur. Periodic leak surveys and cathodic protection surveys will be performed along the pipeline, as required by 49 CFR 192. The pipeline will be continuously protected by a cathodic protection system. PG&E's standard emergency plan will provide prompt and effective responses to upset conditions detected along the pipeline or reported by the public. This plan is reviewed with local agencies annually.

PG&E has a proactive damage prevention program in place that will be applied to the pipeline. Markers identifying the location of the pipeline will be placed at all road crossings. The markers will identify a toll-free number to call before any excavation in the vicinity of the pipeline.

Isolation block valves will be installed at both ends of the pipeline. These valves will be manually controlled, lockable, gear-operated ball valves. PG&E will own and operate the metering facility to measure the gas supply to SFERP. A pipeline Supervisory Control and Data Acquisition (SCADA) system will provide flow rate and pressure data to PG&E and SFERP. Communication with PG&E gas line operations will be by dedicated telephone lines or other means, such as Cellular Digital Pocket Data (CDPD).



PLANT OPERATIONS BUILDING
115kV PLANT SWITCHYARD
℄ 25TH STREET
CTG #1
CTG #2
CTG #3
UP
FUEL GAS METERING STATION
RECLAIMED WATER TREATMENT BUILDING
PLANT ENTRANCE
℄ 20FT. WIDE PLANT ACCESS ROADWAY (TYP.)
NATURAL GAS LINE
PROPERTY LINE – PERIMETER FENCE
MUNI METRO EAST LIGHT RAIL VEHICLE MAINTENANCE AND OPERATIONS FACILITY PROJECT
N
NATURAL GAS LINE PLAN
SCALE: 1"=20'-0"
PRELIMINARY
A 3-7-05 PRELIMINARY ISSUE
SYMBOL DATE REVISION DESCRIPTION DRAWN APP'D
PB Power, Inc.
A Parsons Brinckerhoff Company
303 SECOND STREET, SUITE 700 NORTH, SAN FRANCISCO, CALIFORNIA 94107
SFERP
SAN FRANCISCO, CALIFORNIA
MUNI SITE
NATURAL GAS LINE
DR. JJB
DES. JJB
CHK. SB
APPROVED DATE
PRINCIPAL IN CHARGE DATE
DRAWING NO.
SK 13607-M1
REV A
X-Ref: NONE
\\Sfofpbp\cadd\Hetch Hetchy\MUNI Site\SK 13609-M1 Rev A.dwg
Date 3-7-05 03:22pm Monday Plotted by: blazeski

FIGURE 6-1
NATURAL GAS LINE
SAN FRANCISCO ELECTRIC RELIABILITY PROJECT
SUPPLEMENT A

CH2MHILL

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